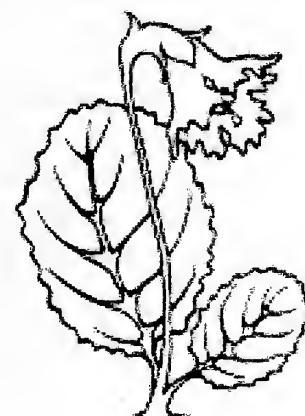


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SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB
SPRING 2002



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Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB - 2002

<i>President:</i>	<i>Bonnie Arbuckle</i>	<i>Treasurer:</i>	<i>Rachel Conway</i>
<i>Vice President:</i>	<i>Helen Smith</i>	<i>Recorder:</i>	<i>Betty Jones</i>
<i>Secretary:</i>	<i>Juanita Lambert</i>	<i>Historians:</i>	<i>Larry & Anna Ballard</i>

FROM THE PRESIDENT.....Bonnie Arbuckle

LOOK AGAIN and Again and Again

Our programs this year have made me aware of the way we see things around us.

Dave Middleton and Elisabeth Feil recorded their observations of scenery and plant life in travels. Judy Nicholson urged us to look at our yards in a new way, suggesting a backyard habitat that provides food, water and shelter for birds and other animals.

Tom Goforth shared his interest in propagating native ferns. The spores were tiny even when viewed with a hand lens. Now many of us are watching our boxes for the first sign of green that indicates the growth of gametophytes.

Dick Smith had a gift for looking at things critically and observing the distinctive differences in plants. He used this gift to create a series of informative sheets, with drawings and explanations, that were part of *Shortia* a number of years ago. Occasionally a member will bring one to a field trip or the editor will include one in a current issue of *Shortia*. The board is considering having the series printed as a fund raiser. Let a board member know if you are interested in this project.

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### UNC HERBARIUM CURATOR

The North Carolina Botanical Garden has announced that Alan. S. Weakley has been named the Curator of the University of North Carolina Herbarium effective June 15, 2002. Weakley will fill the position vacated by Jim Massey who retired after 30 years of service.

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Cover: The flower on the cover is *Shortia galacifolia*, Oconee Bells. Our newsletter is named for this southern endemic which is now rare in the wild.

NEW MEMBERS.....Lois McDaniel

Beverly Dratz: Beverly grew up in Pennsylvania and lived in many places including five years in Germany and Switzerland. She has taken the National Wildlife Habitat Training course. Recently she attended a class at the Blue Ridge Community College on riparian restoration.

Patricia Edmondson: Pat moved here at Christmas. Still a resident of Hawaii, she and her husband live here four months a year and plan to retire to Hendersonville in a few years.

Bill and Sonia Flower: Sonia and Bill moved to Tryon from the Toledo area of Ohio. For their retirement they chose a sloping, wooded two and a half acres. They plan to create nature friendly paths with native wild flowers.

Kathy Kegley: Kathy has a PhD in computer engineering and teaches computer science at Clemson University. She is working on a graduate degree in botany.

Barbara Saurborn: Barbara has lived in Hendersonville 25 years and is happy to have finally found us. She is looking forward to hikes and learning native flowers.

Cora Styles: Cora trained as a scientist in molecular genetics. She has a life passion for mushrooms.

Courtney Ward: Courtney has attended the Wildflower Pilgrimage at Mars Hill College with Wilma Durpos for 14 years.

Alice(Jean) Wickham: Jean found us through her friend Jeanne Smith. She is interested in orchids.

Holly Wilkes: Holly wants to learn about wildflowers. She completed the Master Gardener program about four years ago.

Jim and Lynn Yeager: Both Jim and Lynn are interested in native flowers. Having moved from Dallas, they are looking forward to the different gardening here in NC.

SPRING TRIP

The Cumberland Falls State Resort Park trip , April 29 -May 1, 2002 has two openings at the present time. Accommodations are at the historic Dupont Lodge with morning and afternoon guided tours. The Park lies on the Cumberland Plateau near Corbin, Kentucky. For more information contact Jan Fishback, 687-7842 or e-mail <fishback@haywood.main.nc.us>.. Jan also maintains a waiting list for this trip.

Western Carolina Botanical Club
Treasurer's Report -2001
Consolidated

<u>Income</u>		<u>Expenses</u>	
Dues	\$1239	Printing	\$ 717
Book Sales	304	Postage	268
Donations	104	Office & Historian Supplies	349
		Contributions*	150
<u>Total Income</u>	\$1647	<u>Total Expenses</u>	\$1484
		<u>Income Over Expenses</u>	<u>163</u>

Greetings from Sun City Center near the west coast of Florida. Like the birds, Morgan and I have flown south for the winter – not only to escape the colder weather but to spend a bit more time with a daughter who lives in nearby Tampa.

Birding has been our hobby of primary interest while in Florida (we lived here for many years before retiring to Brevard), but I am now making a feeble attempt to familiarize myself with the flora of this area as well. And feeble it is. I can count on the fingers of one hand the number of species I have identified with any degree of certainty – and you could probably talk me out of those. I pounce on a plant with an “aha” thinking I have finally nailed one, only to find that something doesn’t fit – flower size, leaf shape, habitat, etc. It is indeed frustrating. I need a good field guide with a user-friendly key. Is there a Florida Newcomb? Better yet, I need a WCFBC – a West Central Florida Botanical Club.

As I reviewed the WCBC Trip Reports for the year 2001, one characteristic of our walks became apparent - their diversity. We walked in our own back yards at Herrman's Ramblewood, at the Kanuga Conference Center which is home to the Bockovens and at our place (the Jones Farm). We went further afield to Frances Beidler Forest and the Four Holes Swamp in South Carolina and to the Buck Creek Serpentine Barrens in Macon County.

We took easy strolls on the familiar paths of Jackson Park, along the Davidson River into Sycamore Flats and onto the grounds of the Botanical Garden at Asheville. We visited long-time favorite sites: Pearson's Falls, Bee Tree Gap and various stops along the Blue Ridge Parkway South.

We returned to sites that had not been included for a number of years and even added a few new sites to our list: Bradley Creek Trail along the South Mills River, Flat Laurel Creek at Black Balsam, Bear Pen Gap, the Galax Trail at DuPont State Forest, and Cove Creek in the Green River Gamelands.

We reveled in the diversity of species at Coleman Boundary, the Shut-In Trail and Tanbark Tunnel. And certain sites come to mind when we recall especially showy displays of flowers: the trilliums at Pacolet Falls, the pinkshell azaleas on Pilot Mountain, the buckeyes at Glassy Mountain Preserve and the sunflowers at Frying Pan Gap. In contrast there were the more hidden treasures: the whorled pogonia at the Botanical Garden at Asheville, the pale corydalis near the tower at Frying Pan Gap, the tiny kidney-leaved twayblades on the Greybeard trail, Graveyard Fields and at our place.

A visit to the Corneille Bryan Nature Center at Lake Junaluska showed us how hard work and imagination can transform a relative wasteland into a botanical classroom. On the other hand, we saw the results of neglect at Horsepasture River.

Average attendance at our walks decreased slightly in 2001, but this should not be interpreted as a lack of interest. Membership enrollment remains high and attendance at indoor meetings is good. I would really like to see some new names on our list of leaders, co-leaders and recorders. If you are paired up with a knowledgeable leader, co-leading and recording are the best botany-learning experiences you can have. I speak from my own experience.

--- Happy New Year. May all your weeds be wildflowers! See you in April.

The Orchid Thief: A True Story of Beauty & Obsession

If you are the least bit attracted to orchids, this book is a must read. The author's inspiration was a newspaper article reporting that four men, three of them Seminoles, had been arrested with rare orchids stolen out of a Florida swamp -- the Fakahatchee Strand State Preserve.

The author, Susan Orlean, has crafted a classic tale of a charismatic plant smuggler involved in a bizarre scheme with the feverish world of botanical obsession. She excels at physical description and characterization with sparkling humor, e.g. Florida is "less like a state than a sponge".

She covers such topics as: orchid hunters of the past, the contemporary state of Florida; propagation and cloning of orchids; Florida land scams; history of Florida Indians; plant smuggling; orchid growers and collectors.

The wild orchid most sought after because of its beauty and because it is impossible to cultivate is the ghost orchid, *Polystachya lindenii*, which grows nowhere in this country but the Fakahatchee Preserve. This flower is a lovely papery white and blooms once a year. It has no foliage -- only roots which serve as both roots and leaves. Its lip is especially pronounced and each corner tapers in a long, fluttery tail. Because the plant has no foliage and its roots are almost invisible against the tree bark, the flower looks magically suspended in midair -- like a ghost.

This particular orchid is the focus of the book. It is the object of the poaching scheme and the unrequited desire of the author to see one in bloom. Orlean relates how she hates "mucking around in scum-covered alligator-infested water, with companions as dubious as a work party from a local prison carrying machetes".

This makes me smile because Dick and I were fortunate to join with a ranger-led wade in the Fakahatchee where we saw a blooming ghost orchid. After reading how special this orchid is and how frustrated the author was in trying to see one, I realize just how privileged we were, albeit wet and muddy with clothes to be discarded.

This is a funny, well written, informative, zesty book. Do read it! You'll more than like it. The Orchid Thief is available in paperback from Ballantine for \$14. Be prepared to spend more for your first orchid.



Polystachya lindenii
Ghost Orchid

The ghost orchid drawing is by Dick Smith from his book, Wild Plants of America.

In the previous two issues of *Shortia* we looked at examples of exterior body or animal structures that appear in the Latin names of plants. In this column we will complete this series and concentrate on interior structures.

Sanguin- (Latin root) meaning blood appears in *Sanguinaria canadensis*, the Latin name for our familiar spring flower Bloodroot. For less obvious reasons, this root also appears in *Polygala sanguinea* (Field Milkwort) and *Amelanchier sanguinea* (Serviceberry).

-aden (Greek) and **Glandi-** (L) refer to glands. In *Triadenum virginicum* (Marsh St. John's-wort) three clusters of stamens are separated by three orange glands. *Ribes glandulosum* (Skunk Currant) is so named for the glandular hairs on the fruit.

The roots **Cordi-** (L), **-cor** (L), **Cardi-** (G) and **-cardia** (G) all refer to the heart. This root is most familiar to us in *Aster cordifolius* (Heart-leaved Aster) and *Tiarella cordifolius* (Foamflower), both of which have leaves that are cordate, that is, heart-shaped at the base. *Meehania cordata* has leaves that are entirely heart-shaped. (See Plate 429 in Dick Smith's book.)

Note: The common and Latin names for the Cardinal Flower (*Lobelia cardinalis*) do not come from the Greek root **cardi-**, but rather from the Latin root **cardin-** meaning hinge. One story says that when Queen Henrietta Maria of France (wife of Charles I) first saw this native American plant, she giggled and said that it reminded her of the red stockings worn by the cardinals of the Roman Catholic church, and the name stuck. The bird, cardinal, is also named for the cardinal-red color of its plumage.

Hepato- (G) refers to the liver. In times past, someone noted that the shape and the color of old leaves of a certain plant resembled the liver and named the plant *Hepatica*. Herbalists, also noting this resemblance, used *Hepaticas* to treat liver disease.

Hymenocallis, literally translates to membrane-beauty. **Hymeno-** is Greek for membrane. The beautiful Spider Lily, *Hymenocallis caroliniana*, is so named for its webbed filaments.

The Greek roots for bladder, **cysto-**, **-cystis**, **Physo-** and **-physa** appear in several plant names. In all cases, the plant is named for a bag- or bladder-like structure on the plant.

The genus name for several of our local ferns, *Cystopteris*, refers to their swollen or inflated spore sacs (*indusia*). The fruit of the Wild Cucumber or Balsam Apple is an ovate bag covered with prickles, hence the species name *Echinocystis*, i.e., spiny-bladder.

The root **Physa-** appears in the genus names for the ground cherries (*Physalis*), all of which have a bladder-like fruit. (My grandmother used to make ground cherry preserves and pie, both of which I thought were awful!) A plant whose fruit resembles that of the ground cherries is Apple-of-Peru or *Nicandra physalodes*. (Nicandra was an ancient poet.)

Physo- appears in *Physocarpus opulifolius* (Ninebark) which has dry bladder-like fruits and *Physostegia virginiana* (Obedient Plant) where *physostegia* means bladder-cover, referring to the fruiting calyx.



One of my favorite and one of the most beautiful harbingers of spring is bloodroot. I love the way the leaves stay curled around the flower bud as it emerges from the earth. Then the bud opens to a showy white petaled flower as the sun's warmth touches its surface. The leaves have intrigued me throughout the years, always distinguishable by the unusual palmate shape with five to nine lobes. After the flower dies away, the single leaf of each plant increases in size; the underside of the leaves are paler and prominently veined.

Bloodroot is a powerful medicinal plant and not to be used without some consideration to the potency. Some herbalists say not to take it internally although research is showing a range of benefits such as antiseptic, anesthetic and cancer inhibiting.

To be on the safe side here I will discuss the success I've seen with using the root externally. When a root is dug and cut in two, a red, blood looking liquid oozes from it. This liquid can be applied to warts with great success due to the liquid's skin irritating properties. As the skin gets irritated, a scab is formed and eventually pulls off the wart. Bloodroot is also anti microbial and anti fungal so both of these actions also work on the wort. Ringworm and other fungal conditions can also be positively affected with external treatment of this plant.

Treating skin cancers with bloodroot is bringing amazing results. The plant material needs to be applied very frequently either in the fresh form or with a liquid extract, keeping the area moist all the time. What's so amazing is the bloodroot will pull only the mutagenic cells from the body while leaving the healthy cells unaffected. This is so very different from what a surgical procedure would do. I actually saw a case study of a woman who pulled a deep lesion off her body leaving a huge gap which then filled with beautiful healthy tissue. This is not for the faint hearted; however we can learn a lot about the power of this plant from the experiences of other people.

I add bloodroot extract to my mouth rinse for the antibacterial and anti -plaque properties. Bloodroot is in a commercial toothpaste for the same reason.

Native American used the plant as dye both for the skin and for clothes. According to a story in Medicinal Plants and Herbs by Steven Foster and James Duke, a bachelor of the Ponca tribe would rub a piece of the root on the palm of his hand as a love charm. He then schemed to shake hands with the woman he desired to marry. After shaking hands, the girl would be found to be willing to marry him in 5-6 days.

See what I mean.....powerful medicine!!!

Guide to Plants of Granite Outcrops

This small book of just over a hundred pages is co-authored by William H. Murdy and Eloise Brown Carter. Murdy is a professor of biology and dean of Oxford College of Emory University; Carter is a professor of biology at Oxford College of Emory University. The book would be a beneficial field guide to anyone studying plants of granite outcrops. It has glossy clear pictures of eighty species arranged according to four categories of seasonal flowering from early spring through late summer and fall. It is clearly a book for beginners as well as learned plants persons as it lists the common name first with the botanical name just below.

The book features a map and discloses that most granite outcrops occur in the Piedmont with the greatest concentration of exposed rock east of Atlanta. The authors explain that over 90 percent of the estimated twelve thousand acres of outcrops occur in the Piedmont Region are located in Georgia.

After a brief explanation of what a granite outcrop is they also offer a look at how these unique plant and animal ecosystems are most often unappreciated by the government and local landowners. They are often used for dumping grounds for refuse and waste. Preservation of some of the larger sites is already in progress.

I would have liked to see lichens and mosses included and a more detailed explanation of how granite outcrops came to be. Although this book does not address the mountain regions, I have used it as a guide and found it beneficial for anyone interested in granite outcrops and the plants that grow in these special places.

*Guide to Plants of Granite Outcrops by William H. Murdy and Eloise Brown Carter
was published by the University of Georgia Press in 2000.*

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Ten thousand flowers in spring
the moon in autumn,
a cool breeze in summer,
snow in winter.

If your mind isn't clouded
by unnecessary things,
this is the best season of your life.

Wu Men Hui'ka'i, Chinese Zen Master, 1183-126- B.C.

Dreaming of Spring.....Pat Amett

Thunderpaws isn't with us this year- the delicate little cat with heavy feet. Tristan and Isolde are gone too, but they come to me as I try to fall asleep. Thunderpaws is thumping across the little bridge behind the old house as I start out from the screened back porch. The dogs come running: Tristan with his male ornery-ness and sweet Issy, wiggling her whole body with joy. I open the gate to the pasture as Issy squeezes under the fence and we start up the hill and past the pond. Pasture roses, *Rosa carolina*, edge the field off by the woods which are splendid with clusters of crabapple and dogwood, *Cornus florida*, and the last of the redbud, *Ceris canadensis*, blooming like girls at a Spring prom.

The grasses by the spring are stiff where later the blue Asiatic dayflower, *Commelina communis*, and occasionally a deep colored gentian bloom. We pass the huge rock on which the youngest lambs play King of the Hill, and we go through another gate to the big pasture with its distant hedgerow of tall osage orange, *Maclura pomifera*, whose roots give me yellow dye for wool. Later, ox-eye daisies, *Leucanthemum vulgare*; butterfly weed, *Asclepias tuberosa*; blackeyed susans, *Rudbeckia hirta*; common buttercups and several kinds of violets grow profusely in the grasses. The common blue, *Viola sororia*, are tall in the green grass of the path the tractor makes. And it was here where one summer our son, Nick, mowed the field but left a small circle uncut to save a single blooming rudbeckia.

The grasses and sedges. I especially love them-- the aura of the mauve colored grass over the upper field, the smell of sweet grass, *Hierochloe odorata*, the color of fall broom-sedge, *Andropogon virginicus*, or foxtails, *Alopecurus spp.* in the moving air. The dogs run through the field and Thunderpaws wanders off and starts calling in her low voice to find me again. Cats don't seem to use their noses as dogs do.

We move on, shadowy figures in the woods of an antique orchard. If I were alone I might see deer who'd bark and stamp their hooves and leave with only white tails to see in the distance. In these woods the berries grow among the old apples and pears: red, (white!) and black raspberries, with soft blush on their stems-- and blackberries, *Rubus*, of the rose family. There are elderberries, *Sambucus canadensis*, and fox grapes, *Vitis labrusca*. Brambles bloom in the spring and the bees collect nectar for the honey to sweeten my pies and jams. In another part are more fruits, the low blueberries, probably *Vaccinium angustifolium*.

On the other side going down toward the barn, the sheep are resting as they seem to do in the early afternoon. Lambs knock hard on their mothers' bags as the ewes rise to feed them. A pileated woodpecker wanders around in the dead wood on the hillside, pecking at bugs. We head home.



SHORTIA
c/o Anne Ulinski
1212 Chanteloupe Drive
Hendersonville, N.C. 28739



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SHORTIA

Vol. XXIV. No. 1

SPRING 2002

A quarterly publication of the Western Carolina Botanical Club

Editor: Anne Ulinski
Editorial Assisting and Art Work: Pat Arnett

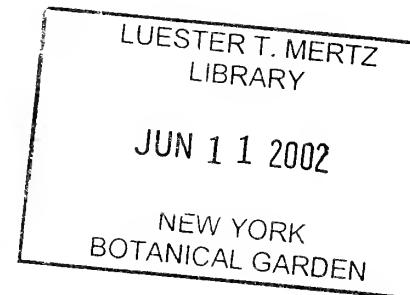
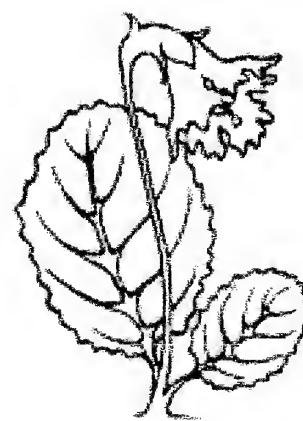
Please submit contributions for the next issue by May 15, 2002 to: Anne Ulinski
1212 Chanteloupe Drive, Hendersonville, N.C. 28739

The purpose of the Club is to study the plants of the Southern Appalachian Mountains and the Southeast through field trips and indoor meetings. Membership is open to all. Individual/family memberships are \$12. New members joining from the period July 1-December 31, pay \$6. All memberships are renewable on January first of each year. Please send dues to: Rachel Conway, Treasurer, 211 Aldersgate Circle, Asheville, N.C. 28803

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SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB
SUMMER 2002



Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB - 2002

President: *Bonnie Arbuckle*
Vice President: *Helen Smith*
Secretary: *Juanita Lambert*

Treasurer: *Rachel Conway*
Recorder: *Betty Jones*
Historians: *Larry & Anna Ballard*

FROM THE PRESIDENT.....*Bonnie Arbuckle*

This has been a spectacular spring for woodland plants. Each trip has had a special display of one or more plants. The Wilder Forest trail was lined with *Trillium cuneatum* (Toadshade Trillium). They seemed to tumble down the slopes. Pearson Falls had an infinite variety of spring ephemerals, birdsong and water music. At Station Cove the *Podopyllum peltatum* (May Apple) were just sending up their umbrella shaped leaves; appropriate for a misty day. *Phacelia bipinnatifida* (Purple Phacelia), *Uvularia grandiflora* (Giant Bellwort) and *Trillium rugellii* (Southern Nodding Trillium) lined the Bat Cave trail. Taking time to stop to admire the blooms and to catch our breath made walking the steep path easier and definitely worthwhile. The scent of *Chionanthus virginica* (Fringe Tree) perfumed the air at Glassy Mountain. The granite rock faces were covered with *Minuartia groenlandica* (Mountain Sandwort) and *Sedum smallii* (Elf Orpine). The list could go on and on.

On each trip I heard someone say: "Oh, I wish my yard looked like this." Wouldn't that be wonderful? Although we can't reproduce the waterfalls or have an exact copy of our favorite spot, we can have natural areas in our yards. In the shady part of my front yard I have removed most of the grass and added woodland plants. Observing the habitat of a plant in its natural setting gives an idea of where to put it in a garden. If put in the right spot, plants spread quickly and there will be some to share with friends. The *Phlox divaricata*, Bruce's White, is making a lovely ground cover under the *Cercis canadensis* (Redbud Tree.) Sometimes plants rearrange themselves. This year the purple phacelia moved across the path to live by the columbine. Who knows where it will be next year?

The 19th Annual Cullowhee Conference 2002 Native Plants in the Landscape will be held July 24-27. For the first time you can register on line at <http://cess.wcu.edu.np> or contact Bobby Hensley at hensley@mail.wcu.edu or telephone 828 227-7397.

Native plants can be purchased from nurseries that propagate from seed or cuttings or from sales at arboreums and plant societies. A list of native plant nurseries is on page 6.

Cover: The flower on the cover is *Shortia galacifolia*, Oconee Bells. Our newsletter is named for this southern endemic which is now rare in the wild.

New Members.....Lois McDaniel

Joel & Sharon Kotch moved here this year from Weston, Va. They have many wildflowers on their new property and are interested in identifying them.

Charlotte Lackey did research five years ago on the *Shortia galacifolia*, Oconee Bells, growing around the shoreline of Lake Jocassee. This May she made a presentation of her work to the International Michaux Symposium. A retired government worker, she has a degree in field biology.

Robert & Marijane Pell

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Change in Club Dues

In mid-April a short board meeting was held to discuss club finances. It preceded the scheduling meeting. We currently have about 100 members and a budget of \$1500.00. Mailing costs will increase in June 2002. Our current dues of \$12.00 member/family will not cover these expenses. It was the consensus of the board and scheduling group members present that the dues be raised to \$15.00 per year beginning in 2003. When dues were paid this year, our treasurer received a check for \$15.00 and a note that said membership was a bargain at that price. I hope you agree. -President Bonnie Arbuckle

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Membership Lists

Each summer issue of *Shortia* will have a list of Botanical Club members by place of residence (summer address) --see page 3. This replaces membership lists mailed in past years. For information concerning specific field trips, call the leader or co-leader shown on the field trip schedule.

Wilderness Wild Life Week of Nature - January 11-19, 2003

A quote from Pigeon Forge, Department of Tourism: "Educating about the ecosystem and having fun doing it is the focus of our Wilderness Wildlife Week of Nature. Come and join the many national and international visitors who come to the nine-day event to learn and explore the mountains of East Tennessee."

....Join the city of Pigeon Forge and the 88+ recognized experts from Great Smoky Mountains National Park, the U.S. Fish & Wildlife Service, Tennessee State parks and the many educators from the universities in Tennessee and surrounding states. For nine days you can enjoy hikes, a llama trek, field trips, lectures, leadership workshops, displays and much more. Learn about nature and come to understand the fragile environment that makes up the nation's most visited national park."

Information can be found on their web site <www.mypigeonforge.com>. Botany club member Jan Fishback has attended this event in previous years and suggests it will be of interest to other members.

Western Carolina Botanical Club Membership 2002

Asheville, N.C.	Flat Rock, N.C.	Horse Shoe, N.C.
Bender, Donald & Louisa	Arbuckle, Bonnie	Dodge, Hatha
Conway, Rachel M.	Avery, Larry & Anita	Morgan, Shirley
Crawford, Dean & JoAnn	Gibson, Ruth Anne & John	Lake Junaluska, N.C.
Dupree, Al & Agnita	Holmes, James & Barbara	McFarland, Linda & J. Edgar
Durpo, Wilma	Fletcher, N.C.	Lake Toxaway, N.C.
Feil, Elizabeth	Ellis, Peggy & Craig	Allen, Barbara D.
Hansens, Elton & Aline	Gerton, N.C.	Dziedzic, Betty
Lackey, Charlotte	Florence, Thomas & Glenna	Yost, Sandra
Lindley, Mary Ellen	Greenville S.C.	Lexington, N.C.
Middleton, Dave & Milly	Burton, Mr. & Mrs. Henry B.	Fisher, Don
Robbins, Paula	Hendersonville, N.C.	Leicester, N.C.
Takaro, Tim & Marilyn	Anderson, Kenneth & Jane	Yost, Sandra
Bon Air, VA.	Arnett, Patricia	Marion, N.C.
Verduin, Bill & Evelyn	Ballard, Larry & Anna	Goldsmith, James W.
Brevard, N.C.	Bockoven, Paul & Elizabeth	Norcross GA
Blaha, Millie	Butenhof, Ed & Barbara	Arrington, Daisy
Craig, Elizabeth R.	Davis, Thomas and Jane	Pisgah Forest, N.C.
Cross, John	Dratz, Beverly	Kurinsky, Allen & Naomi
Farrar, W. Edmund & Carver	Edmondson, Patricia	Parmi, Erika
Gunn, Bob & Betty	Fontaine, Bet	Schmidt, Christine
Hudson, Jack & Dorothy	Foresman, Louise	Smith, Helen M.
Jones, Betty	Gadd, Charles & Frances	Saluda, N.C.
Moore, Eric & Peggy	Herrman, Don & Dana	Pearson, Millie
Peelle, Miles	Hoerich, Ruth	Wilkes, Holly
Perry, Pat & Lois	Krumenauer, Keene	Santa Maria CA
Schifeling, Daniel & Annalee	Lambert, Larason & Juanita	Rice, Grace
Smith, Jeanne	Lenhart, Jean	Seneca, S.C.
Strayer, Lucie A., Colmont, R.	McDaniel, Lois	Kegley, Kathy
Updike, Connie	Matthes, Herbert & Anne	Sylva, N.C.
Wickham, Alice	Merkle, Mary L.	Harris, Mary Helen
Candler, N.C.	Montgomery, Bob and Elaine	Horne, Ann and Lynn
Carlson, Betty	Pearson, Bud & Laverne	Miller, Earl & Bettye
Canton, N.C.	Petteway, Jo	Stenger, Raymond & Gloria
Fishback, Happy and Jan	Pell, Robert & Marijane	Tryon, N.C.
Charlotte, N.C.	Polchow, Peggy	Flower, Bill and Sonia
Ward, Courtney	Prentice, Donald & Alta Mae	Galda, Odessa
Clemson, S.C.	Saurborn, Barbara S.	Kuster, Ivan & Harriet
Hall, Karen	Sidoti, Marjorie	Waynesville, N.C.
Columbus, N.C.	Sinish, Ken & Bessie	Couric, Elrose/Hollinger, Sue
Smoke, Henry & Therese	Styles, Cora	Evans, Maxilla
Tener, Albert & Virginia	Tregay, Rosemary	Fitts, Jackie and Robert
Dillard, Ga.	Ulinski, Anne	Thomas, Jane and George
Center, Dan & Barbara	Yeager, Tim & Lana	
Etowah, N.C.	Highlands, N.C.	
Kotch, Joel & Sharon	Davis, Charlton & Patricia	
	Harris, Walker	
	Poole, Kay & Edwin	

Recorder Ramblings.....Betty Jones

Ten "hardy souls" braved balmy spring weather to walk through the woods at **Caney Bottom**. Nothing was yet in bloom, but the buds of Trailing Arbutus (*Epigaea repens*) gave promise of the spring to come.

Our next walk of the 2002 season was truly a "hardy souls" walk as, in the words of the walk recorder, "the temperature dropped into the 20's during the night, the wind howled and there was a dusting of snow on the deck". **Wilder Forest**, a new site for the club, is a part of Warrior Mountain that has recently been acquired by the Pacolet Land Conservancy. The trails are well-marked and maintained and sturdy bridges cross the creek, but part of the cliff trail is steep. There were "millions of trilliums", specifically *Trillium cuneatum*, an abundance of Blood Root (*Sanguinaria canadensis*) and many of our other spring favorites.

Our perennial visit to **Pearson Falls** was well attended as usual (24). Since we had a fern specialist in the group, eight ferns were identified. Seven species of violets were seen, as was the Green Violet (*Hybanthus concolor*) which is not in the genus *Viola*. A new plant was Green Dragon (*Arisaema dracontium*) which may have been planted there recently.

Star Chickweed (*Stellaria pubera*) and Rue Anemone (*Thalictrum thalictroides*) carpeted the banks along the trail at **Green River**. A special treat was finding a Carolina Rhododendron (*Rhododendron minus*) in bloom this early in the year. Highlight of the walk was a grove of Pawpaw (*Asimina triloba*) trees in full bloom.

In spite of threats of rain all morning, we stayed dry for the **Station Cove** walk. Seventy-three species were reported, forty-six in bloom. Especially noteworthy were Green-and-Gold (*Chrysogonum virginianum*) all along the trail, Birdfoot Violet (*Viola pedata*) on the road banks, *Trillium cuneatum*, *erectum* and *catesbaei* scattered throughout, the lone Pinxter Flower (*Rhododendron periclymenoides*) next to the path and a mass of Canada Violets (*Viola canadensis*) near the falls. Nine ferns were identified.

The recorder report for **Bat Cave** says it all: "This was the most spectacular flower walk I have attended. The number of plants in bloom and the profusion of plants was unbelievable. There were vast areas covered with purple phacelia, great bellwort, yellow mandarin, blue cohosh and Canada violet. The *Trillium rugelii*, although not as numerous, was outstanding." A definite repeat for next spring.

The walk at **Glassy Mt. Preserve** is always a treat because we see plants that rarely appear on any of our other walks. Once again we admired the Elf Orpine (*Sedum* or *Diamorpha smallii*), False Garlic (*Nothoscordum bivalve*), Mountain Sandwort (*Minuartia groenlandica*) and Hairy Spiderwort (*Tradescantia hirsuticaulis*) growing in mass-and-mixed profusion. The buckeye was keyed-out as Painted Buckeye (*Aesculus sylvatica*). The scent of Fringe Trees (*Chionanthus virginicus*) in full bloom was heavenly.

Our timing was perfect for the walk along the **Davidson River** and through **Sycamore Flats**. Creamy Violet (*Viola striata*), Foamflower (*Tiarella cordifolia*), Mayapple (*Podophyllum peltatum*), Showy Orchis (*Galearis spectabilis*) and Star Chickweed (*Stellaria pubera*) were abundant and at their peak. Sharp eyes spotted the Pennywort (*Obolaria virginica*).

Plant Labels

Do you ever wonder what that plant is growing in your garden, or in the spring do you inadvertently plant a plant over a plant? Our club member, Larason Lambert, offers the following instructions for preparing plant labels to mark your garden flowers:

A very practical material for making plant labels is vinyl siding, as is used for the outside finish of houses. Odd pieces are often available from home supply stores such as Lowe's or Home Depot at discounted prices. White pieces provide the best background contrast for writing, but one could use different colored pieces for color coding if desired. The five-inch "traditional lap" can be cut into five-inch wide flat strips using a box cutter. These, in turn, can be cut into any size and configuration using a pair of tin snips.

The simplest configuration would be a simple rectangle with a 1/4 inch hole punched in the middle of one side using a leather hole punch. This piece could then be hung from a length of 14 gauge, galvanized, solid steel wire; with one end shaped into a spiral, as illustrated in Figure 1.

Another one-piece configuration can be cut from the five-inch wide strips in a manner illustrated in Figure 2. This one-piece design could be cut to any length, and to widths of either 2" or 5". Of course, all of this requires a lot of time for cutting, and is only as neat as your own cutting precision and handwriting.

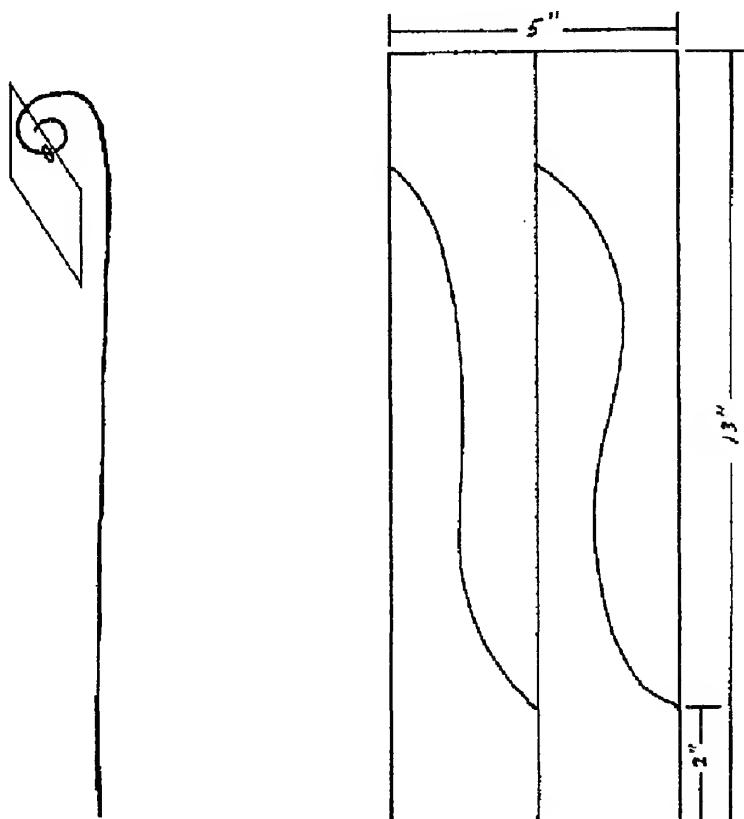


Figure 1

Figure 2

Invasive Non-native Plants

Every national park has a mandate to protect the native species found on its land. A new focus on such protection is the removal of invasive non-native species (exotics). Many of these exotics are harmless but others pose a serious threat to the ecosystems of our national parks.

The Smoky Mountains National Park has a four member vegetative management team to protect native species by keeping exotics from spreading. Of the many species of plants identified in the Smokies, 380 are non-native, introduced from Europe, Asia, Africa and Australia. Most do little harm but about 35 spread aggressively.

The Carl Sandburg Home National Historic Site has a three year management plan for the removal and control of exotic species on its property in Flat Rock, N.C. Forestry Technician, Irene Von Hoff, worked on the property through the summer of 2001 to prepare this plan. For the next two years she will be at the Sandburg Site to implement the study.

Among those plants which are a serious threat to native plants are multiflora rose, privet, garlic mustard, kudzu and evergreen exotics such as Japanese honeysuckle and English ivy. The evergreens can be removed in the winter, multiflora rose in early spring and kudzu, garlic mustard, oriental bittersweet, mimosa and others in late spring and summer.

How can we, gardeners and owners of private land with native plants, do our part in the control of exotics? In a conversation with Irene Von Hoff, she suggested we remove from our private land some of the most invasive of the exotics to prevent their spread to nearby properties. Some of these exotics are privet, Japanese barberry, autumn olive and Oriental bittersweet - - all spread by seed dispersal. English ivy, long a landscape favorite, should be carefully controlled or replaced with one of our native ground covers. When English ivy spreads into wooded areas it can out-compete native plants such as trillium, Jack-in-the-Pulpit, ginger, bloodroot, partridge berry, Solomon's seal and many other of our desirable native plants.

NATIVE PLANT NURSERIES

Arrowhead Nursery 6150 Watia Road, Bryson City, NC 28713 (828-488-6840) - Trees
Crow Dog Native Plants, 376 Carrick Creek Rd, Pickens, SC 29671 (864-878-1786) - Ferns
Darvin's Backyard PO Box 3532 Cullowhee, NC 28723 (828-586-6869) - Bog plants
Elk Mountain Nursery PO Box 599 Asheville, NC (www.elk-mountain.com)
Laurel Springs Nursery Bradley Rd, Hendersonville, NC 28792 (828-89-1264)
Native Gardens 5737 Fisher Lane, Greenback, TN 37742 (www.native-gardens.com)
Niche Gardens 1111 Dawson Rd, Chapel Hill, NC 27516 (www.nichegardens.com)
Sandy Mush Herb Nursery Dept CG9, 3316 Surrett Cove Rd, Leicester, NC 28748
Sunlight Gardens 174 Golden Lane, Andersonville, TN 37705 (www.sunlightgardens.com)
Sunshine Farm & Gardens Renick, WV 24966 (www.sunfarm.com)
Wa Ya Nursery & Tree Farm 11095 Canada Rd, Tukasegee, NC (828-293-5720)
Woodlanders, Inc 1128 Colleton Ave, Aiken, SC 29801 (www.woodlanders.net)

Allegheny Spurge.....Deanne M. Eversmeyer

Everyone is familiar with the ubiquitous groundcover, *Pachysandra terminalis*, but the Southeast is home to our own species, *Pachysandra procumbens*, the Allegheny Spurge. This evergreen member of the Boxwood (Boxaceae) family is found in deciduous woods from West Virginia to Kentucky and south to Florida and Louisiana.

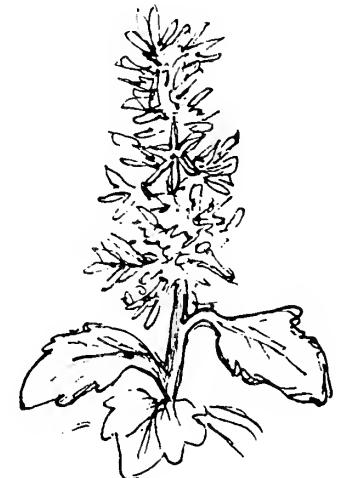
By winter the old foliage is a mottled bronze-green with a dappling of silver, mostly prostrate, radiating out from the center. In midwinter, tight chains of flower buds can be found at the crown, waiting for the earliest signs of spring. As soon as the weather begins to warm, short bottlebrush-like spikes of fragrant pinkish-white flowers emerge. The showy male flowers occupy the upper part of that spike, while the less conspicuous and less numerous female flowers sit below.

The floral display is followed by the emergence of new bright green foliage which stands upright and unfolds into a matte green canopy 6 to 10 inches tall, bigger than its Japanese cousin in all parts.

There are a few named varieties in commerce based on the amount of mottling on the leaves. "Eco Treasure" is more highly variegated, and "Forest Green" is a darker green form .

Allegheny Spurge performs best in a rich, moist woodland soil in part to full shade. Propagate by cuttings taken in June or division of mature plants. Instead of sending runners, our *Pachysandra* forms a clump, radiating out from the center. This, according to Carole Ottesen in her book, *The Native Plant Primer*, makes the Allegheny Spurge ideal "as an edger along a shady path where its beautiful coloration can be appreciated and where more robust groundcovers would be too invasive."

Although Allegheny Spurge is easy to grow and not troubled with problems which plague Japanese Spurge, it is not always easy to find. Ask at your local native plant nursery -- with demand comes supply.



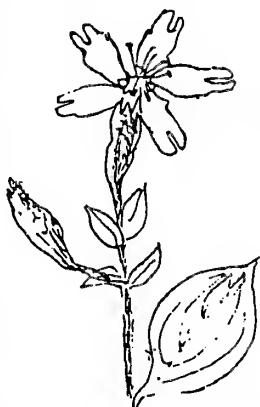
Excerpted with permission from "Cullowhee Notes", The Newsletter of the Native Plants Conference, Spring 2002. Deanne is managing horticulturist for Washington Golf and Country Club in Arlington, Va., Horticulture Chair for the Virginia Native Plant Society; and Editor of "Cullowhee Notes."

A vast inland sea once covered the area of Kentucky where Cumberland Falls lies. This was millions of years ago, long before man inhabited the land. The sediments carried into the sea from creeks and rivers were slowly deposited in layers on the sea floor. As the sea dried out, these layers changed into rock, especially a hard and very resistant type called Rockcastle Conglomerate. The intricate carvings and layering which can be seen at Cumberland Falls Park are the result of the wearing away of the softer layers of the rock faces.

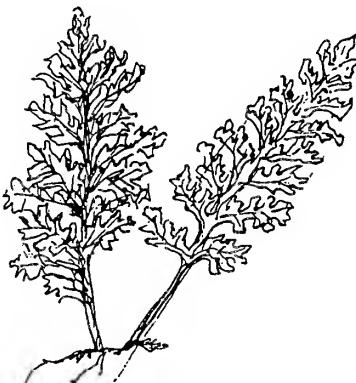
Twenty-two members of the Botanical Club visited the Park from April 29-May 1, enjoying perfect weather; the leadership of Steve Smithey, our Park trail guide; and the fun of sharing a new landscape with other club members.

As we walked the trails, we saw familiar plants but others new to many of us. Some of the unusual ones were: *Krigia biflora*, Cynthia; *Oxalis violacea*, Violet Wood Sorrel found throughout the woods; *Coreopsis auriculata*, Eared Coreopsis; *Isopyrum bitemnatum*, False Rue; the much rarer *Heuchera parviflora*, Grotto Alumroot growing on the wet and shady rock faces; *Silene rotundifolia*, Sandstone Firepink; and *Trichomanes boschianum*, Appalachian Filmy Fern found in the damp acid grottoes of sandstone cliffs and described in one book as the "daintiest and most delicate" of our ferns. Although not as unusual, we enjoyed the orange and red bell-shaped flowers of Cross Vine, *Bignonia capreolata*, found in full bloom on trees as close as those along the parking lot and the colorful *Salvia lyrata*, Lyre-leaved Sage, found in large numbers on banks and along the roads. Crossing a brook on one of the trails we found a tall flourishing plant with small white flowers. Steve keyed it out as garlic mustard, *Alliaria officinalis*, an exotic invasive. He had been told to look for this plant so that it can be removed as it appears and does not spread throughout the forest.

We were fortunate to have with us two members with a knowledge of astronomy, Anna and Larry Ballard. Anna helped us identify the five planets, Venus, Jupiter, Saturn, Mercury and Mars as they slowly appeared in the darkening western sky. And four determined members stayed at the falls one night until 2:30 a.m. to see the "moonbow", a rainbow appearing over the falls at or near the time of the full moon.



Silene rotundifolia
Sandstone Firepink



Trichomanes boschianum
Appalachian Filmy Fern



Coreopsis auriculata
Eared Coreopsis

SHORTIA

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Editorial Assistants: Pat Arnett and Jean Lenhart

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Please submit contributions for the next issue by August 15, 2002 to: Anne Ulinski
1212 Chanteloupe Drive, Hendersonville, N.C. 28739

The purpose of the Club is to study the plants of the Southern Appalachian Mountains and the Southeast through field trips and indoor meetings. Membership is open to all. Individual/family memberships are \$12. New members joining from the period July 1-December 31, pay \$6. All memberships are renewable on January first of each year. Please send dues to: Rachel Conway, Treasurer, 211 Aldersgate Circle, Asheville, N.C. 28803

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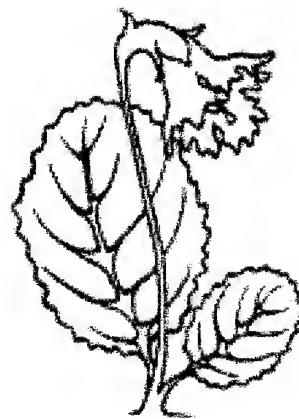
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New York Botanical Garden
Bronx, N.Y. 10458-5126

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SHORTIA

NEWSLETTER OF THE
WESTERN CAROLINA BOTANICAL CLUB

Autumn 2002



Shortia galacifolia

Oconee Bells

WESTERN CAROLINA BOTANICAL CLUB - 2002

President: *Bonnie Arbuckle*
Vice President: *Helen Smith*
Secretary: *Juanita Lambert*

Treasurer: *Rachel Conway*
Recorder: *Betty Jones*
Historians: *Larry & Anna Ballard*

FROM THE PRESIDENT.....*Bonnie Arbuckle*

Bullington Horticultural Learning Center

Robert Bullington wanted to share his love of plants and ways of propagating them with the community. He left his 13 acre property on Zeb Corn Road and records of his horticultural methods to the county for this purpose. This property, now known as the Bullington Horticultural Learning Center, has made the news recently as the Henderson County Education Foundation explores ways to finance and maintain the property.

When Robert Bullington moved to North Carolina from New York, he brought 2 truck loads of plants with him. Here he opened a nursery and continued his hobby of plant collection and propagation. The house is landscaped with his collection of unusual plants--- Japanese and paperbark maples, dogwoods and pines. He experimented with ways to propagate native plants by cutting and seed. The property has a large collection of native azaleas grown from seed collected on Gregory Bald.

Currently, John Murphy is employed as a part time coordinator salaried by the school system and the agricultural extension service. His program with school children has been so successful that Bullington is now on the approved field trip list for county schools.

The property includes the landscaped grounds, a greenhouse complex, a nature trail and amphitheater. Much of the work has been accomplished with the help of volunteers. In 2001 a team from the botanical club visited monthly and made a list of the plants flowering along the nature trail. Now we have been asked to conduct a wildflower identification workshop. The idea was accepted at the recent board meeting.

oo oo oo oo oo oo oo

Share a Plant: A neighbor recently asked if I would like some Cardinal Flower (*Lobelia cardinalis*) plants. She had a population explosion. While weeding I found a large bed of seedling Fringed Phacelia (*Phacelia bipinnatifida*). Perhaps you have found extras in your garden. If you have plants to share bring them to the Fall picnic (October 4). I am sure they will find a good home and you may find a treasure.

Cover: The flower on the cover is *Shortia galacifolia*, Oconee Bells. Our newsletter is named for this southern endemic which is now rare in the wild.

New members.....Lois McDaniel

Beth Brinson lives in Waynesville. She has a B.S. degree in horticulture from the University of Georgia. Botanizing the "incredible variety of plants in this area" is one of her greatest passions. She has botanized with the Field School and the Wildflower Pilgrimage.

Paul and Simone Shoemaker live in Horse Shoe. Paul has been a plant pathologist with the N.C. State University for 32 years. Simone is a nurse with the Hendersonville Board of Education. They have a Christmas tree and landscaping business. Both are looking forward to our walks and programs.

Member News

This summer our president, Bonnie Arbuckle, attended a planning and information meeting regarding the future of Bullington Center.

Anne Ulinski was asked to write an article for the National Park Service publication "Natural Resource Year in Review - 2001". The article is entitled "Carl Sandburg Home: Biodiversity in a small park" and is based on the inventory, monitoring and herbarium projects at the Carl Sandburg Home National Historic Site in Flat Rock, N.C.

Peyton Rock Outcrop

In July 120,000 pounds of granite rock were delivered to the Botanical Gardens at Asheville, the first step in a project to establish a new habitat exhibit at the Gardens - a granite outcrop. One of the rocks weighed 22,000 pounds with the next weighing in at 18,000 pounds.

These huge rocks have now been put in place. They are a neutral gray and well worn with natural pits and crevices perfect for establishing rock outcrop plants. Among those plants are many familiar to those of us who have explored the rock outcrops on Sky Valley Road, a field trip the Botanical Club schedules each year. They are: *Talinum teretifolium*, Fameflower; *Hypericum gentianoides*, Pinweed or Orange Grass; *Lechea racemulosa*, Pinweed and *Corydalis sempervirens*, Pale Corydalis. These plants require full sun exposure, good drainage and specialized soils.

Garden Manager, Randy Burroughs, reports that they hope to have forty to fifty species established on the outcrop, most new to the Garden. Those that are annuals will be seeded directly on the outcrop while others will grow in the greenhouse this winter.

This granitic outcrop habitat will be like no other botanical garden exhibit in our region. It is made possible with a generous donation from the Peyton family.

Our walk at **Pacolet Falls** in April may have been the club's last there as the property has been put under a conservation easement and a building is being constructed at the trail entrance. This is one of our favorite sites for Trillium (*Trillium catesbaei*, *T. erectum*, *T. grandiflorum*) and Canada Violets (*Viola canadensis*) which are abundant there.

The threat of storms kept attendance low at the **Jones Farm**, but the rain held off and we completed the loop to the waterfalls and back. Highlights of the walk were Showy Orchis (*Galearis spectabilis*), Appalachian Twayblade (*Listera smallii*), abundant Indian Cucumber Root (*Medeola virginiana*) and Vasey's Trillium (*Trillium vaseyi*). Fourteen ferns were identified.

Coleman Boundary continues to thrill us with its variety and abundance of blooming plants. It is here that we see some less common plants: Golden Saxifrage (*Chrysosplenium americanum*) – not yet in bloom at walk time, Wild Comfrey (*Cynoglossum virginianum*), Dwarf Larkspur (*Delphinium tricorne*) and the leaves of Live-forever (*Sedum telephiooides*).

Unfortunately, our walk at **Travis Tracks** had to be cancelled because of rain, but the 18 participants enjoyed, instead, a tour and demonstration at the Glass Feather studio.

Pinkshell Azaleas (*Rhododendron vaseyi*) were past their prime in mid-May on **Pilot Mountain**, but trail-side bloomers were abundant, namely; Wild Sarsaparilla (*Aralia nudicaulis*), Canada Mayflower (*Maianthemum canadense*), Umbrella Leaf (*Diphylleia cymosa*) and Rose Twisted Stalk (*Streptopus roseus*). At the summit was a beautiful patch of Painted Trillium (*Trillium undulatum*) and, of course, the wonderful 360-degree mountain view.

Our timing was perfect for seeing the Hairy Mock Orange (*Philadelphus hirsutus*) on the **Tanbark Tunnel to Bull Gap** trail. The Mock Orange and Flame Azalea (*Rhododendron calendulaceum*) were spectacular on some hillsides. Several rare plants were identified: Large-leaf Waterleaf (*Hydrophyllum macrophyllum*), Ginseng (*Panax quinquefolius*), Broadleaf Tickseed (*Coreopsis latifolia*) and Mountain Catchfly (*Silene ovata*).

A late-May frost did a considerable amount of damage to several plant species along the **Greybeard** trail. Especially affected were *Clintonia borealis*, Rose Twisted Stalk (*Streptopus roseus*) and ferns of all kinds. Vast expanses of Solomon's Plume (*Smilacina racemosa*) in full bloom made up for the lack of other flowers.

The group made four stops along the **Blue Ridge Parkway South**. Plants of note were the Flowering Raspberry (*Rubus odoratus*) at Wagon Road Gap, Bristly Locust (*Robinia hispida*) at Cherry Cove and Looking Glass Overlooks, and Mountain Fetterbush (*Pieris floribunda*) at John's Rock Overlook.

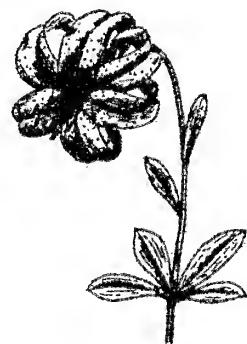
Twenty-one participants, with fern guides in hand, met at the Lambert's **Fernhaven** for a morning of learning and fun. The group was charged with matching 37 tagged and numbered ferns to their names on a checklist of 50 – a real challenge for many of us.

Participants in the **Wayah Bald** walk were treated to an abundance of Fawn's Breath (*Porteranthus trifoliatus*), Goatsbeard (*Aruncus dioicus*) and Flame Azalea (*Rhododendron calendulaceum*). Near the summit were Sweet White Azaleas (*Rhododendron arborescens*).

Impressions and Poetry

Ann Houghton of Roanoke Falls, N.C. joined us on our field trip to Bee Tree Gap on July 19. She was visiting in Gerton with Club members Glenna and Tom Florence who suggested she might enjoy a day with the Botanical Club. During the field trip she heard members talking about the Turk's Cap Lilies near Mills River Valley Overlook. Later that day she found the lily site and wrote her impressions:

"I went down the path on the left
[from the parking lot at Mills River Valley
Overlook] and walked through a dense forest.
Many times I started to walk back but did not
want to give up. Then I saw them -an acre at
least of Turk's Cap Lilies and Carolina Lilies.
I felt like I had shrunk as everything was so tall.
The flowers were over my head. There were giant
sunflowers higher than I could reach. I also saw
Blue Ridge Phacelia, Indian Cucumber Root (huge),
Leather Flowers in all stages, Heal All, Indian Pipe,
Tall Flowering Joe Pye Weed, Spotted Wintergreen,
Spiderwort and ferns that came up to my shoulders.
It looked like a fairy land. There were other flowers
that I couldn't identify. I just couldn't believe it, it was
so beautiful. It went on for a long way. I did not go to
the end of the trail as it was getting late and I felt I
should get back....I thought, what a day for wildflowers."



Lilium michauxii
Carolina Lily

oo oo oo oo oo oo oo oo oo oo

Listen.

This living land
is all there is, forever

We are it
It sings through us --

Gary Snyder

Poaching Lady's Slippers

Shortia received the following letter from member Charlotte Lackey: "In June my husband, Don, and I discovered poaching of Yellow Lady's Slipper orchids off the Mountains-to-Sea-Trail near Grassy Mine Ridge Overlook on the Blue Ridge Parkway. We notified the U.S. Forest Service botanist for the Nantahala National Forest and suggested they discontinue collecting of any species on Forest Service Land." Here is part of the reply they received from the Forest Service Botanist, Gary Kauffman:

"It is indeed a travesty that this species is being collected both for horticultural and medicinal usage.... Yellow lady's slippers, both the small and large variety, have been traditionally used as a nerve tonic and sedative both by the Cherokee and European settlers. Due to the scarcity of lady's slippers species and many orchids across their range, most modern herbalists have discontinued any use of all orchids. However recent evidence indicates there is still a market for lady's slippers within Europe, particularly Germany. A shipment of 50,000 processed yellow lady's slipper roots were recently denied export by the US Fish & Wildlife Service since [there was no proof] ... the material was sustainably harvested. Unfortunately it is suspected that many of the plants, valued at \$30,000, were illegally harvested off portions of the Pisgah & Nantahala National Forests and the Blue Ridge Parkway. Your observation at the Grassy Ridge Mine site further substantiates the illegal harvest of this species.

...Yellow lady's slippers are currently on the North Carolina Natural Heritage Program watch list (W5B category which denotes exploited plants)....Regarding our policy on the collecting of lady's slippers on National Forest lands in North Carolina, we do not allow collection of any lady slippers or orchids."

~~~~~

## A Few of Appalachia's Most Wanted Plants

Black Cohosh (*Cimicifuga racemosa*) is used to treat menopausal symptoms and collection has skyrocketed. In 1998 one Blue Ridge Parkway ranger seized 1517 pounds of cohosh roots from a single pickup truck. The approximate value was \$15 per dried pound.

Galax (*Galax aphylla*) is collected for the floral industry. More than 100,000 stems of illegally collected galax were seized along the Blue Ridge Parkway in the first six months of 2000 alone. Value can be \$1 per stem

American Ginseng (*Panax quinquefolius*) is probably the most sought-after species in the exploding international market for native plants. Great Smoky Mt. National Park officials estimate that \$5.3 million worth of ginseng roots were pilfered from the park in the last nine years alone. A fine orange powder is now being used to permanently mark the roots as U.S. government property. Reputable ginseng dealers won't accept dyed roots because they have been illegally harvested. And, the silicon granules enable authorities to identify the plants in court.

## Ethical Wildcrafting

Herbal remedies have been used for centuries for health and healing. Their increased use in health products has focused attention on just where the herbs are found.

Many products combine herbs with other ingredients so it is well to understand how herbs are distinguished from other "neutraceuticals"<sup>1</sup>. An herb is a loose term for any medicinal product made from any part of a plant. This can include those made from bark (slippery elm), berries (saw palmetto), leaves (gingko), roots and rhizomes (ginseng). Actually "botanicals" is the more accurate term for these products because in the official world of botany an "herb" refers only to a non-woody plant.

Wildcrafting is the process of collecting plants in the wild versus cultivating them. Many popular herbs do not take well to cultivation or are not cultivated in large enough quantities to meet the growing demand. Some herbs such as ginseng can still be found in the wild. They have a high value and some people will search out the last remaining patch in their area and dig it up. These people are, in effect, plant poaching.

American ginseng and goldenseal are powerful native plants which have been wildharvested to the point where they are now extremely rare in the wild. If you are buying certain plants such as American ginseng and goldenseal, purchase only those that have been cultivated, not wildharvested. The labels of many botanical products carry the statement "ethically wildcrafted" which distinguishes them from others that have been gathered through potentially unethical wildcrafting.



Ethical wildcrafting is an art practiced by people who understand the balance of an ecosystem and are familiar with how a plant propagates. They know how abundant a plant is in a particular area and only gather plants without damaging their future in the wild. For example, ethical wildcrafters do not gather goldenseal in the wild. Many may actually spread seeds of certain plants to insure there will be large numbers in the years to come. Many wildcrafters consider themselves plant stewards.

*Hydrastis canadensis*  
Goldenseal

For more information about the status of medicinal plants in the wild, consult United Plant Savers at their web site [www.plantsavers.org](http://www.plantsavers.org). United Plant Savers is an organization dedicated to preserving threatened medicinal plants and to keeping the public and the industry informed.

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*Excerpted in part from "Becoming Stewards of Plants, Not Poachers", by Rachel Pritzker, Associate Director of the Master of Arts in Botanical Healing program at the Tai Sophia Institute in Columbia, Maryland. Meridians, Summer 2002.*

<sup>1</sup>*Neutraceuticals is a term used to describe foods which assist in the management and prevention of disease.*

*Shortia galacifolia*.....Charlotte Lackey

I have two stories to tell about the rare and beautiful, *Shortia galacifolia*: its discovery and its inundation.

Andre Michaux, a French botanist, spent many 18<sup>th</sup> century years in this country collecting new plant species and sending samples to France. In 1839 Dr. Asa Gray, Professor of Botany at Harvard, discovered in Michaux's Paris herbarium an unfamiliar plant from the Carolinas with no indication of the exact site or date collected. Gray named the plant *Shortia galacifolia* after his botanist friend Charles Short of Kentucky, and the similarity of its leaves to Galax.

After his return from Paris, Dr. Gray and other prominent botanists searched for *Shortia* without success. In 1877 G. M. Hyman, aged 17, found *Shortia* on the banks of the Catawba River in McDowell County, NC. Then in 1886 *Shortia* was rediscovered in Jocassee Valley near the spot where Michaux may have collected his specimen on June 13, 1787. This area lies several miles below the confluence of the Whitewater and Toxaway rivers which form the Keowee River in Oconee County, South Carolina. It is near the present Duke hydro dam.

After *Shortia*'s rediscovery in Jocassee Valley, a botanist named Boynton found every brooklet lined with it. He wrote. "... "What is comforting to the botanist is that it can hardly be exterminated...[it is] in such abundance that no amount of collecting can ever affect it strenuously....Our party took away bushels of it, and no one could tell that a plant had been disturbed, so thickly it is growing."

Lake Jocassee was formed in the early 1970s when Duke Energy dammed the Keowee for hydropower. This was the heart of *Shortia*'s habitat where the colonies of plants were continuous. After inundation these plants were drowned.

During 1994-95 I inventoried *Shortia* from a canoe, along the shoreline of the lake. I discovered that much of the shoreline where some *Shortia* plants are now growing is being lost to erosion, undercut by wave action.

In 1998 I went with representatives of Duke Energy and the S.C. Department of Natural Resources to rescue *Shortia* at locations where large patches were in danger. We relocated at least two hundred plants uphill from the shoreline. This year I revisited these relocated colonies and found most to be thriving.

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*This May, Charlotte Lackey, a new member of the Club, presented a paper on *Shortia* at the International Michaux Symposium which was held in Gaston County, N.C. Charlotte has written a short version for our newsletter. We have omitted her footnotes for our article.*

*Charlotte and her husband live in Asheville. She is a retired government worker with a degree in field biology. She will be giving a slide presentation on *Shortia* this winter at one of our indoor meetings.*

*Phragmipedium kovachii* was discovered this May in Peru. The orchid has a magenta and purple blossom that measures half a foot across and a stem that measures a full foot in height.

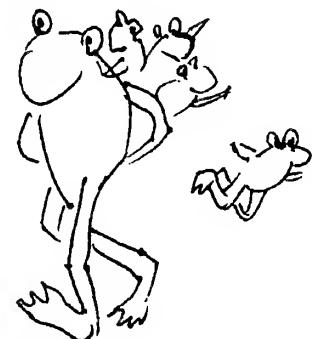
This spectacular orchid was found by Michael Kovach, a nursery owner from Virginia. He was in Peru and stopped at a roadside stand which was selling some other beautiful orchids. The owners showed him the phragmipedium which he bought for \$6.50. He took the orchid to the Marie Selby Botanical Gardens in Sarasota, Fla. Dr. Wesley Higgins, director of systematics at the Gardens, and his colleagues began immediately to preserve and document the plant for publication and named it after Michael Kovach.



Three days after Kovach purchased the orchid he had returned to buy additional plants and found that what had been a mossy slope of 500 of the new orchids had been stripped clean, even of inch-tall seedlings. All this may remind you of a book which Jeanne Smith reviewed in a recent *Shortia*, The Orchid Thief: A True Story of Beauty & Obsession, and another book, Orchid Fever. A Horticultural Tale of Love, Lust and Lunacy, brought to our attention by Betty Carlson.

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Two species of frogs in New Guinea have been observed moving with up to two dozen babies on their backs. The frogs are a species of microhylids - frogs that lay eggs in the ground, not in water, and produce froglets not tadpoles. The males take care of the offspring, including guarding and moving the eggs.



Dr. David Bickford of the University of Miami has discovered another job the Papua New Guinea male frogs perform. The frogs travel with their offspring for three to nine nights covering up to 50 feet a night. During these rides froglets jump off their father's back one at a time distributing themselves more or less evenly throughout the forest. Dr. Bickford suggests this may be an evolutionary adaptation designed to decrease competition for food, reduce the risk of attraction by predators and lessen the chances of inbreeding.

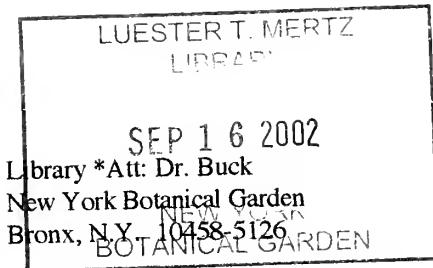
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A new genus of centipede has been found in leaf litter in New York's Central Park. It is only four-tenths of an inch long making it one of the smallest in the world. It has been named *Nannarrup hoffmani*, after the man who discovered it. The centipede has found its niche in the park, making a living by devouring and breaking down leaf litter.

SHORTIA  
c/o Anne Ulinski  
1212 Chanteloupe Drive  
Hendersonville, N.C. 28739



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## SHORTIA

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AUTUMN 2002

A quarterly publication of the Western Carolina Botanical Club

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Editor: Anne Ulinski

Editorial Assisting: Pat Arnett and Jean Lenhart

Art Work: Pat Arnett

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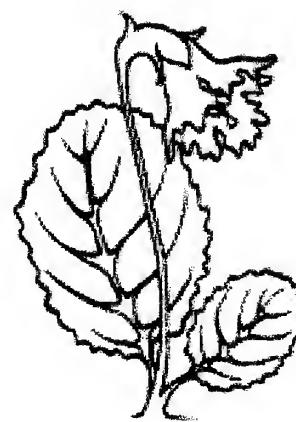
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# SHORTIA

NEWSLETTER OF THE  
WESTERN CAROLINA BOTANICAL CLUB  
WINTER 2002



*Shortia galacifolia*

Oconee Bells

## WESTERN CAROLINA BOTANICAL CLUB - 2002

*President:* *Bonnie Arbuckle*  
*Vice President:* *Helen Smith*  
*Secretary:* *Juanita Lambert*

*Treasurer:* *Rachel Conway*  
*Recorder:* *Betty Jones*  
*Historians:* *Larry & Anna Ballard*

---

### FROM THE PRESIDENT.....Bonnie Arbuckle

It was a rainy Sunday afternoon, a perfect time to gather at the Pisgah Center for Wildlife Education to learn about mosses and lichens. Dr Jim Perry introduced us to the three types of lichens---crustose, foliose and fruticose. We often see the foliose rock tripe lichen (*Umbilicaria mammulata*) when we walk in rocky areas. The genus name refers to the umbilicus that attaches it to the rock. At one point rain and wind had brought lots of lichen clad branches to the ground. The foliose shield lichen and the fruticose beard lichen were abundant.

Mosses were available for examination in the class room and in their natural setting along the nature trail. They were found growing on rocks, on tree trunks, on the soil and even in the water. A hand lens brought out the intricate pattern of the leaves and helped with identification. Both the feather moss (*Neckera sp*) and the fern moss (*Thuidium sp*) have a fern like pattern that many found challenging.

Dr. Perry concluded his presentation with this quote from Daniel McKinley. "One of the greatest uses a thing can have in this overcrowded, overadvertised, overhastening world is usefulness through beauty." Mosses and lichens are indeed beautiful. Look for them and enjoy them on your winter walks.

.....

Our Annual Meeting will be held on Friday, January 10, 2003, at St. John's in the Wilderness Parish Hall in Flat Rock. The club officers will report on events of the year and new officers will be elected. There will be book prizes as well. Bring your own table service and a covered dish to share.

A reminder: Member dues are renewable on January 1, 2003. The dues are \$15 for individual/family.

Cover: The flower on the cover is *Shortia galacifolia*, Oconee Bells. Our newsletter is named for this southern endemic which is now rare in the wild.

J.S. and Patricia Chattaway, former WCBC members, live in Balsam six months and Sarasota, Fl. six months. Pat enjoys the hikes. Mary Helen Harris introduced them to WCBC.

E. Ray Cottier is interested in native plants. In 1991 he attended a survival classs at Blue Ridge Community College with emphasis on edible plants.

Lucy McGuirt found WCBC through Dana Herrman. She is interested in learning more about herbs. A retired math teacher, she has lived in Lake Toxaway for four years.

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### Statement of Purpose

It was almost 30 years ago on March 27, 1973 when a small group of people met to elect officers and define the purposes of a new organization - the Western Carolina Botanical Club. Most of the decisions made then have survived over time. Activities consist mainly of field trips with indoor programs in bad weather, a single formal meeting each year, and a modest dues structure.

In 1973 conservation did not play a prominent role in the study of botany. Today we know that our native plants and plant communities need protection and we cannot continue to enjoy plants in the wild without the preservation of their habitats. It is not the intent of the Club to take an active role in conservation issues but the executive committee has rewritten the original aims to include our concern and dedication to protection of natural areas and native plants.

#### 1973 Statement of Purpose

1. For the study, enjoyment and appreciation of the plants of Western North Carolina in their natural environment.
2. For the collection and compilation of information and data on the plants of Western Carolina and the dissemination of this to other interested persons.
3. For the education of interested persons in the enjoyment and appreciation of wildflowers and other plants.

#### 2002 Statement of Purpose

1. To study, enjoy and appreciate the plants of Western Carolina in their natural environment.
2. To compile data on the plants of Western North Carolina and disseminate such data to interested persons.
3. To encourage members and the public to protect plants, especially native plants, and to preserve the habitats in which they are found.

The 2002 Statement of Purpose was adopted by unanimous vote of the members of the executive committee at its meeting on August 27, 2002.

## Recorder Ramblings.....Betty Jones

Our first visit to the **Ashmore Heritage Preserve** will not be our last. It is home to some very special plants: Grass Pink (*Calopogon tuberosus*), Flatrock Pimpernel (*Lindernia monticola*), Sweet Pitcher Plant (*Sarracenia jonesii*), Horned Bladderwort (*Utricularia cornuta*) and Racemed Milkwort (*Polygala polygama*), all of which were in bloom when we were there.

There were no showy flower displays along Wolf Branch Road at the **North Carolina Arboretum** at the end of June but there was good variety - we checked 92 species on our lists. Hail had damaged many plants at **Roan Mountain** and fog obscured the view. The group did find two Gray's Lilies (*Lilium Grayi*) in bloom – always a highlight of the trip – and a colorful patch of Spreading Avens (*Geum radiatum*) among the rocks.

**Bee Tree Gap** was our most popular walk of the year with 29 attendees and our timing couldn't have been better. Two plants captured our interest for their color and relative abundance: Nodding Wild Onion (*Allium cernuum*) and Tall Bellflower (*Campanula americana*). Fire Pink (*Silene virginica*) was abundant while Starry Campion (*Silene stellata*) was just beginning to bloom. Large numbers of Columbine (*Aquilegia canadensis*) were still blooming.

Overcast skies kept temperatures moderate on **Sky Valley Road** at the end of July. This area is home to plants that tolerate the dry hot conditions found here. In contrast to the tiny flowers of the Pencil Flower (*Stylosanthes biflora*) and Orange Grass (*Hypericum gentianoides*) were the spectacular blooms of the Yellow Fringed Orchid (*Platanthera ciliaris*).

We walked the **Shut-In Trail** in early August hoping to see Turk's Cap Lilies (*Lilium superbum*) and the rare Fringed Campion (*Silene ovata*) and we were not disappointed – both were in bloom. Dainty Southern Harebell (*Campanula divaricata*) and twining Leatherflower (*Clematis viorna*) were in abundance on this Parkway trail.

Whorled and White Wood Aster (*Aster acuminatus* and *A. divaricatus*) bordered the trail from **Bear Pen Gap** to the beautiful cleared area where we ate lunch and snacked on blueberries. Goldenrods were just beginning to bloom. Sharp eyes spotted several Slender Ladies' Tresses (*Spiranthes lacera*) in the open field.

A staff member at the **Highland Botanical Gardens** acquainted us with the medicinal properties of the plants on view there. At **Frying Pan Gap** we walked up to the tower to enjoy the view, to admire the Sunflowers along the way and to reacquaint ourselves with Intermediate Dogbane (*Apocynum medium*) with its pink bell-shaped flowers.

The summer drought did not seem to affect the flowers at **Jackson Park**. Purple Gerardia (*Agalinis purpurea*), Asters, and Ironweed (*Vernonia noveboracensis*) were in abundance. Our path was covered with Buttonweed (*Diodia virginiana*). A single Water Hemlock (*Cicuta maculata*) plant prompted much discussion – or was it Poison Hemlock?

Heavy rain in the area threatened to wash out the **Lake Issaqueena** walk, but the few who braved the weather saw a number of plants we seldom encounter on our walks: Beauty Bush (*Callicarpa americana*), Parrot Feather (*Myriophyllum aquaticum*), Climbing Hempweed (*Mikania scandens*), Dog Fennel (*Anthemis cotula*) and Murdannia (*Murdannia keisak*).

The 2001 Revised and Expanded Edition of this book is a large volume with about 140 pages dedicated to fern growing and 450 pages focused on the description and identification of hundreds of worldwide fern species.

The Manual is an excellent and detailed reference for growing ferns from spores. Information relating to fern cultivation, such as soils and soil preparation, light conditions, moisture needs, fertilizers, and problems with ferns, is extensive and well organized. However, guidance for landscaping with ferns is cursory, giving the reader little vision for fern gardening ideas.

Because of its size, the Fern Grower's Manual is not a field guide of choice, but it is a very useful and up-to-date source for identification of world fern species. The 450 pages entitled *Ferns and Fern Allies in Cultivation* is organized alphabetically by genera. It is richly illustrated with black and white photos, scanned images, and drawings of entire plants, fronds, and other characteristics that are very useful in fern species identification. Each genera section is, however, arranged alphabetically with few dichotomous keys. The well-written descriptions of species include only brief statements about the ecology and geographic distribution of each species.

The Fern Grower's Manual combines fern propagation, culture, and identification in ways that few other references accomplish. It is an excellent choice for the fern lovers library.

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*Fern Grower's Manual Revised and Expanded Edition* by Barbara Joe Hoshizaki and  
Robbin C. Moran    Timber Press, Inc. 2001

*Tom Goforth is the owner of Crow Dog Native Plants, a fern nursery located in Pickens, S.C. He photographed the Lowland Brittle Fern on Wadakoe Mt. eight miles from his home. We should see this fern when Tom takes us to Peach Orchard Branch in spring 2003.*

*Cystopteris protrusa*  
Lowland Brittle Fern



As Chimney Rock Park celebrates its 100<sup>th</sup> anniversary as a privately held scenic attraction, the fourth generation of the Morse family still owns and operates the Park.

It all began in 1900, when Dr. Lucius B. Morse, a young physician from St. Louis, MO, came to Hendersonville to be cured of tuberculosis. On horseback he explored his new surroundings and was enchanted by the beauty of Hickory Nut Gorge with its mighty cliffs and the towering chimney. (The chimney and surrounding acres were owned by Jerome B. Freeman. He had had ladders built to the top of the chimney and he had widened an existing wildlife trail, today's Cliff Trail. The property had been opened to the public in 1895). Having climbed the chimney and taken in the beauty of the valley, Dr. Morse began dreaming of creating a vacation area with a lake and all the conveniences of modern leisure life. All he had to do was to convince his older twin brothers, Hiram and Asahel, that his idea was sound. That he did, and in 1902 the three brothers bought a 64-acre tract of land that included the chimney.

In the fall of 1915 better access to the chimney had become necessary so the brothers started working on a sturdy bridge across the river and a three-mile road up the mountain. In order to dynamite house-size boulders along the last mile of the planned route, they had to pipe in water from a spring on top of the mountain, bring up a steam boiler, and steam-drill holes into the rocks. On July 4, 1916, in spite of very bad weather caused by hurricane Hilda, the new bridge and road were dedicated. A few days later, parts of the road and the new bridge were washed away. But the brothers, undeterred, rebuilt.

Guilford Nanny, a local contractor, was chosen to design and build new trails and stairs. Halfway up the road a gate kiosk was constructed next to the gate keeper's house. To feed the ever-increasing lunch crowd, a three story dining pavilion was built in 1919 on what is now Vista Rock. It seated 200 persons and became famous for its fried chicken. There was no lodging in the valley, therefore the Cliff Dwellers Inn, consisting of several cottages with state-of-the-art facilities such as hot and cold running water and shower baths, was built on a ledge of the rock wall. The back wall of the "Club Room" which was used for breakfast, dinner, and socializing, was the mountain itself.



*Ptelea trifoliata, Wafer Ash,  
is found growing along the upper  
trails at Chimney Rock Park*

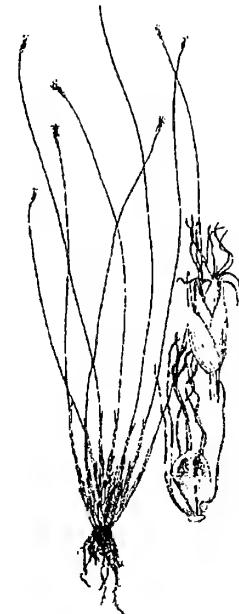
To further their plans to develop a vacation resort, it was apparent that the Morse brothers needed to attract more investors. It was Dr. Morse who took on the task of recruiting investors in Rutherford County and other areas. By 1923, Chimney Rock Mountains, Inc. was formed. It was capitalized at \$400,000, the largest corporation granted by the state of North Carolina up to that time. The corporation bought more than 8000 acres of land including Chimney Rock Park. The company extended its reach to new investors through a prospectus issued in 1925 that listed as major sources of revenue: Hydro-electric Power; Real Estate Development; and a Pleasure Resort. A hydro-electric dam was built in 1925-26 to create Lake Lure with 27 miles of shoreline, and the town of Lake Lure incorporated in 1927. The

stock market crash of 1929, however, and the Great Depression cut all development short and sent the corporation almost into bankruptcy. The Morse's family owned Chimney Rock Company barely managed to re-purchase the Park and to keep it operating.

A new start was made in 1932 with the employment of Norman Greig as operations and public relations manager. His promotional presentations throughout the country were very successful, and by 1934 construction of a new entrance wall and gate with a ticket office, restrooms, and Park offices began under the supervision of Asheville architect Douglas Ellington, the designer of the Grove Park Inn. On the steeper cliffs, the local contractor Nanny Guilford, built six-foot wide rock-filled, dirt covered cribs to carry the trails. Remnants of these cribs can still be found in the woods across the waterfall.

*Scirpus cespitosus var. callolus*, Deerhair Bulrush, an arctic tundra plant found growing on rock faces at the Park. The cold micro-climate on the north-facing rocks support this rare disjunct which can be found in much colder places such as Alaska and Siberia.

Around this time Hiram Morse began to think seriously about a dream he had entertained for many years. He felt that the park needed a mechanical device to help visitors reach the top of the chimney. Remember, they had to climb stairs from the parking lot to get there. Plans for an elevator began in 1946. A tunnel eight feet square and 198 feet long was blasted into the mountain. Then a 3" hole was drilled down to the end of the tunnel as a guide for the blasting of the vertical shaft. All in all, 8 tons of dynamite were used to complete the work. Otis Corporation installed the high-speed, stainless steel elevator that can carry 3,500 pounds up 258 feet in about 30 seconds. At the time this elevator was the highest in North Carolina.



While all this was going on, work crews dismantled the Cliff Dwellers Inn and the Pavilion, both of which were in need of renovation. Simultaneously a building was erected over the elevator shaft: the Sky Lounge, a combination gift shop, snack bar, and elevator lobby. The Sky Lounge and elevator were officially dedicated on May 16, 1949 by Hiram Morse. Dr. Lucius B. Morse, however, did not see this dream fulfilled. He had died in July of 1946 at 75 years of age.

The 50s brought two new events to the park: The first non-denominational Easter Sunrise Service was held in 1955. It still attracts hundreds of people to the great view of the rising sun over Lake Lure and is broadcast live by WHKP-AM Hendersonville. A very different event, the Chimney Rock Hillclimb, created at the request of sports car enthusiasts, was run 50 times in 30 years from 1965 until 1995. The last few years of the Hill Climb also saw the Hill Fall, where riders of gravity-powered, homemade washtub racers competed for prizes.

To provide access to the base of Hickory Nut Falls, a rough one lane road was cut through the woods and beginning in 1963, visitors could ride jeeps to a small pavilion below the falls. The rides proved to be very popular, but were discontinued during the energy crisis in the 70s. Today the road is a popular walking trail called the Forest Stroll.

(continued next page)

In the 70s, Lucius B. Morse III, Hiram Morse's grandson, and Todd B. Morse, Hiram's great-grandson, became actively involved in the management of the park. They concentrated their efforts on improving the infrastructure. In 1981, the five acre Meadow was created for special events. On Labor Day of 1981 a fire destroyed the Sky Lounge, a major blow to the park. It was replaced by a new building erected from pre-assembled parts that were carried by helicopter to the construction site. In June of 1982 the new Sky Lounge was ready to be opened to the public.

During these years, the Morses thought it necessary to find out more about the natural aspects of their property. To that end, in 1978 they invited Drs. James F. Matthews and Robert E. Lemmon from the University of North Carolina at Charlotte to survey the trails. What they found was an unexpectedly great diversity of plants and many interesting geological features. The result of this foray was the first written Nature Trail Guide to the Park which was revised in later years and followed by other interpretative literature, among them a bird list, compiled by ornithologist Simon Thomson, and a wildflower guide. A botanist, Elisabeth Feil, was hired in 1986 and a vacant maintenance building converted into a Nature Center in 1987. The focus of the center was on natural and historic aspects of the park. Subsequently, the park developed an environmental education program, encompassing all age groups from Brownies to adults. A larger Nature Center opened on the Meadow in 1992.

Today the park carries on its educational mission through guided hikes, interpretive programs, and posters. The main focus, however, is on environmental education of fourth-grade students. The park has several events each year for large school groups, and has developed special materials for teachers corresponding to the school curricula.

Under the leadership of Todd B. Morse, fourth-generation member of the Morse family and the first to work for the park full time, the future looks good. And the fifth generation is waiting in the wings -- Tristan Nathaniel Morse, almost 6 years old.

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Botanical club member, Elisabeth Feil, completed a masters degree at UNC-Charlotte with her thesis based on the floristics and vegetative patterns of Chimney Rock Park. She became the park's first naturalist. She has led field trips to the park sharing her extensive knowledge of the park's plants with botany club members.

Some of the unusual plants we have seen there are: *Goodyera repens* var. *ophioides*, the Lesser Rattlesnake Plantain; *Uniola latifolia*, a grass related to sea oats; *Asplenium pinnatifidum*, Lobed-spleenwort, a hybrid of Walking Fern and Mountain Spleenwort; *Lycopodium selago*, Fir Club-moss, another arctic plant like the Deerhair bulrush; *Pallaea atropurpurea*, Purple Cliff Brake which needs limestone and grows on a calcite vein running along a rock face; *Heuchera parviflora*, Cave Alumroot which is on the N.C. Watch List; *Selaginella apoda*, the very primitive Meadow Spike Moss and *Amelanchier sanguinea*, New England Serviceberry, listed as rare in North Carolina.

In 1850, more than ten years before his death, Henry David Thoreau had published his first book, A Week on the Concord and Merrimack River at his own expense, and he had announced the publication of his second book, Walden; or Life in the Woods. He had found it necessary to start a surveying business because his book was not selling and he had moved into the third floor attic of the newly remodeled house in Concord he shared with his parents and younger sister. He felt "at loose ends" as he wrote in his journal and turned his attention to science, especially botany.

He began to carry a botanical guide with him on his afternoon walks, he built a scaffolding inside the crown of his hat to carry botanical specimens and his field notes became more complete and accurate. He was elected a corresponding member of the Boston Society of Natural History which gave him the privilege of using their extensive library. Looking back on that time, he wrote:

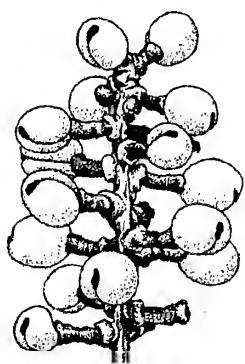
"I remember gazing with interest at the swamps about those days and wondering if I could ever attain to such familiarity with plants that I should know the species of every twig and leaf in them...Through I knew most of the flowers, and there were not in any particular swamp more than half a dozen shrubs that I did not know, yet these made it seem like a maze to me, of a thousand strange species, and I even thought of commencing at one end and looking it faithfully and laboriously through until I knew it all."

As he conquered plant identification, he moved into another level of observation which is now called phenology. This is the study of natural phenomena that recur periodically such as the migration of birds or the flowering of plants. He wrote:

"..I soon found myself observing when plants first blossomed and leafed, and I followed it up early and late, far and near, several years in succession, running to different sides of the town..often between twenty and thirty miles in a day."

It was at this time that the Smithsonian Institute sent a circular to scientists across the country entitled "Registry of Periodical Phenomena" and invited all persons to record their observations of "periodical phenomena of Animal and Vegetable life". The Smithsonian lists were much like the lists and charts Thoreau had been assembling, information which became a large project that included the material in a recently published book.

WILD FRUITS, Thoreau's Rediscovered Last Manuscript, edited and introduced by Bradley Dean of the Thoreau Institute, Lincoln, Mass. was published in 2000 by W.W. Norton. With many descriptions of the fruits of plants, more than 50 line drawings, a Thoreau chronology, a glossary and 100 pages of footnotes, this is a book for your Christmas list. *Time* wrote of it "...The world [Thoreau] saw and so lovingly portrayed lives on vividly in his words..[which] memorably communicate to us his wonder and joy."



The fruit of *Actaea spicata* Thoreau described as "imp-eyed"

SHORTIA

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Art Work: Pat Arnett

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FIRST CLASS

